

## BMP #31 - Perimeter Dike/Swale

<p><b>Targeted Pollutants</b></p> <ul style="list-style-type: none"> <li><input checked="" type="radio"/> Sediment</li> <li><input type="radio"/> Phosphorus</li> <li><input checked="" type="radio"/> Trace metals</li> <li><input type="radio"/> Bacteria</li> <li><input type="radio"/> Petroleum hydrocarbons</li> </ul>	<p><b>DESCRIPTION</b></p> <p>A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area. The purpose of a perimeter dike/swale is to prevent off-site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.</p>
<p><b>Physical Limits</b></p> <p>Drainage area <u>2 acres</u></p> <p>Max slope <u>10 %</u></p> <p>Min bedrock depth <u>5 ft</u></p> <p>Min water table <u>5 ft</u></p> <p>SCS soil type <u>ABC</u></p> <p>Freeze/Thaw <u>fair</u></p> <p>Drainage/Flood control <u>yes</u></p>	<p><b>APPLICATIONS</b></p> <p>A perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along top of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.</p> <p>The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.</p> <p><b>DESIGN PARAMETERS</b></p> <p>The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners.</p> <p>A detailed design is not required for the perimeter dike/swale. However, the following criteria shall be used:</p>

Drainage area: Less than 2 acres (for drainage areas larger than 2 acres, but less than 10 acres , see BMP #30 - earth dike; for drainage areas larger than 10 acres, see BMP #33 - storm drain diversion).

Height: 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike: 2 feet minimum.

Width of Swale: 2 feet minimum.

Grade: Dependent upon topography, but shall have positive drainage

(sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

Outlet

- The perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
- Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.

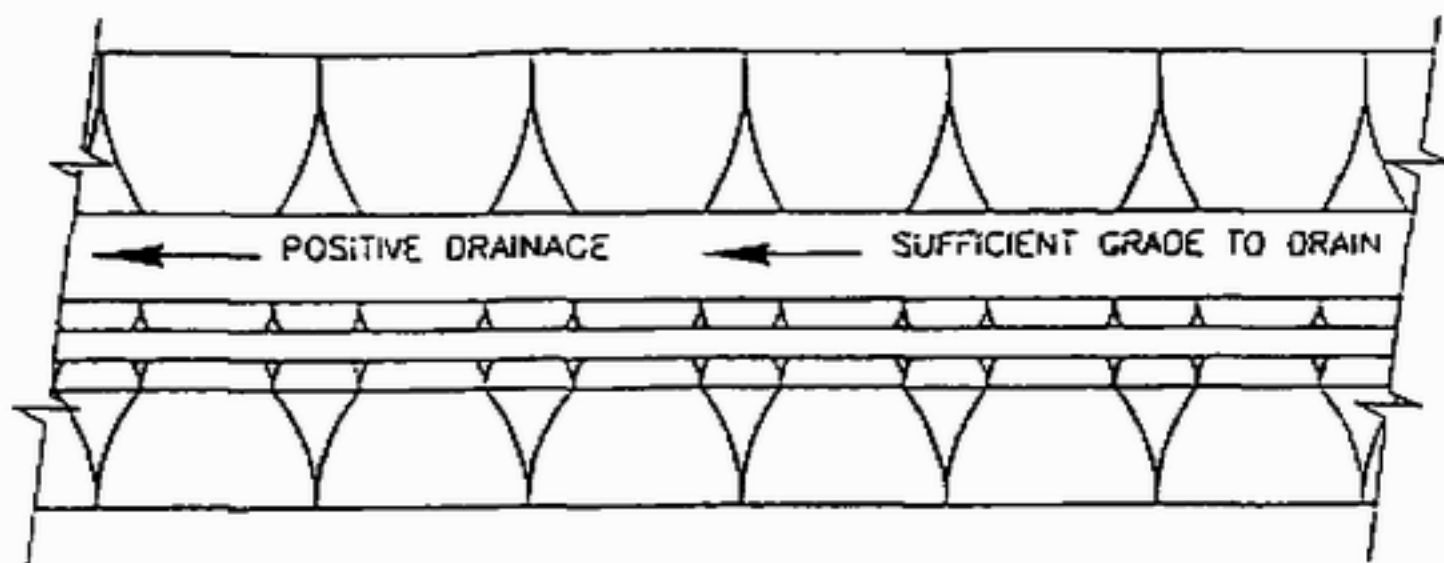
- Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap (BMP #27), or to an area protected by any of these practices.
- The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet

## **CONSTRUCTION GUIDELINES**

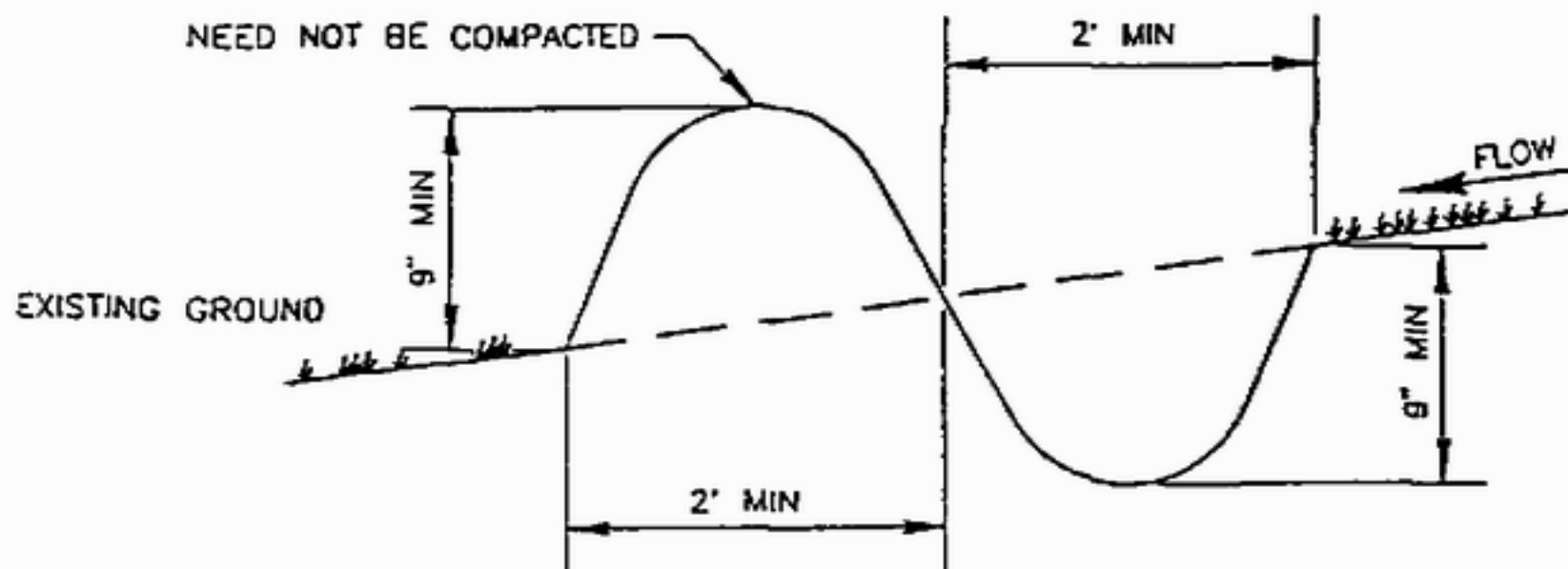
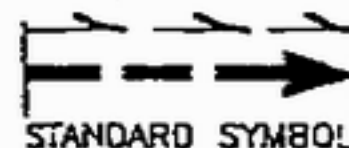
The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the guidelines seed and straw mulch or straw mulch only if not in the seeding season. (See BMPs #33 and #11).

## **MAINTENANCE**

See BMP #30 - Earth Dike, or BMP #38 - Vegetated Swale.



PLAN VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

- 1 ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
- 2 DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
- 3 DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
- 4 THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
- 5 STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
- 6 PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

MAXIMUM DRAINAGE AREA LIMIT: 2 ACRES

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

TOOTHMAN-ORTON ENGINEERING COMPANY  
BOISE, IDAHO McALL, IDAHO

PERIMETER DIKE/SWALE

STANDARD  
DRAWING

PDS-1